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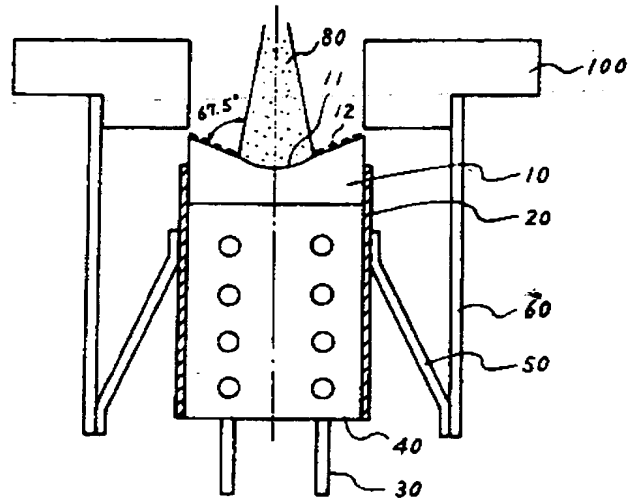
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APPLICANT : NEC CORP;

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TITLE : PIERCE TYPE ELECTRON GUN



ABSTRACT : PURPOSE: To obtain a pierce type electron gun employing an immersed cathode having good electron beam focus characteristic, by reducing the differential thermal expansion between the cathode tube and the wenelt electrode thereby suppressing the variation of the perviance at the operation.

CONSTITUTION: The impregnated type cathode 10 is constructed such that a porous tungsten ingot having the porosity of 20% is prepared then impregnated with the non-oxygen copper and worked to make the angle of 67.5 degree against the outermost shell of the electron beam 80 for the purpose to provide the wenelt electrode at a portion. Then it is jointed to the molybdenum supporting tube 20 through the brazing or welding. Thereafter a heater 30 is arranged in said tube 20 together with the mixture of the alumina powder and the organic binder and sintered 40. Then barium oxide, calcium oxide and aluminum oxide are placed on a concave electron radiating face 11 then solved and impregnated. Thereafter a film 12 composed of metal such as tungsten is formed through the fused injection coating method on the surface portion of such impregnated type cathode 10 which functions as the wenelt. Said tubular cathode is jointed to the support 100 through the metallic supports 50, 60 thus to complete the pierce type electron gun.

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